

REMARKS/ARGUMENTS

Claims 1, 4, 5, 7-12, 29 and 30 are pending.

Claims 1, 4, 8, and 9 have been amended; claims 10 and 11 are now canceled.

The rejections of claims 1, 4, 5, 7-11, and 29 under 35 USC §103(a) as being unpatentable over Carter (US 5,877,609) in view of Mawston (US 5,866,274) and Lopez-Doriga (US 4,634,642), is respectfully traversed.

With respect to claim 1

According to the amended claim 1, the at least one auxiliary terminal has a shape smaller than the shape of each of the main positive and negative terminals. More specifically, the at least one auxiliary terminal is smaller than each of the main positive and negative terminals. For the storage battery provided with plural terminals, various devices are attached, and of them, a device (e.g., a circuit for starting an engine when the battery is used for an automobile), which requires remarkably high power by itself, is preferably connected to a terminal that causes only a small power loss in power transmission. Also, preferable are terminals which can be easily identified whether they are those to which the device is to be connected, which contributes to ease of connection. In this regard, the main terminals and auxiliary terminals of the amended claim 1 of the present invention are different in size, and therefore the terminals that cause only small power loss in power transmission can be securely identified at a glance.

Still according to the amended claim 1, since the at least one auxiliary terminal is disposed inside of the recess on the top of the lid, it is possible to prevent the auxiliary terminal from contacting various external parts or members to be connected to the main terminals and the at least one auxiliary terminal, such as cords. Therefore, this arrangement contributes to ease of handling of cords when connecting the same to the main terminals or auxiliary terminals, and for example; suppress the disadvantage that a cord connected to such as an auxiliary terminal is forcibly and undesirably bent or folded. It is also to be noted that the recess may provide a space for mounting an electric component, depending, on the size, shape or the like.

In addition, according to the amended claim 1, the connection portion has a part embedded inside the lid that extends from the at least one of the main positive and negative terminals embedded in the lid and has an end protruding from the inside of the lid to the inside of the recess. Thus, only the portion required for connection with a cord or terminal is exposed to the outside, while the residual portion is embedded, preventing the exposure to the outside as much as possible. Accordingly, it is possible to appropriately prevent unintentional contact or interference of a cord or terminal to the auxiliary terminals or the main terminals.

The Examiner states that USP 5,877, 609 (Carter) discloses:

"said lid has on its top a recess (the holes into which the auxiliary connections are placed or screwed into are recesses and it is implied that there are further recesses included in

the top so that the main terminals can make contact with the internal cells of the battery, while the sides of the top of the battery are also recessed in between the main terminals as seen in Fig. 2)";

"said connection portion that extends from the at least one of the main positive and negative terminals partly embedded in the lid, the part of the connection portion having a protruding end that protrudes to the inside of the recess (no. 240 and 250 in Fig. 3 and no. 340 and 350 in Fig. 4 and col 5 In 57 to col 16 In 13)"; and

"said at least one auxiliary terminal is located at the protruding end (no. 362, 364, 366, and 368 in Fig. 4 and col 5 In 57 to col 6 In 13). Additionally, the connection portions no. 240, 250, 340, and 350 are partially placed in recesses on the slanted side of the battery in Fig. 3 and 4, and those connection portions can reasonably be considered. part of the auxiliary terminals."

However, respectfully what is not apparently appreciated in the foregoing is that the combination of Carter, Mawston and Lopez-Doriga do not disclose, or suggests the claim limitations of Applicant's amended claim 1 with respect to the following points, and therefore do not suggest how to produce the above-mentioned advantages.

a) In Carter, a recess is not formed on the top of the lid. As mentioned in the above Item (4), the Examiner understands that the members 362, 364, 366 and 368 correspond to the auxiliary terminals. Based on this understanding, the Examiner considers that the holes into which these members are placed or screwed into are recesses. This Examiner's understanding is incorrect. That is, these holes are not formed on the top of the lid but formed in the connection portions (240, 250 in Fig. 3, and 340, 350 in Fig. 4).

b) Carter does not disclose the connection portion having a part embedded inside the lid that extends from the at least one of the main positive and negative terminals embedded in the lid and has an end protruding from the inside of the lid to the inside of the recess. Instead, Carter discloses the connection portions each extending from a portion of the main terminal, which portion is not embedded in the lid, to have its entire extent to the opposite end completely exposed from the top of the lid. In this respect, the Examiner mentions in the outstanding Office Action that the connection portions of Carter are not entirely exposed on the top of the lid, in the sense that they partially go into the recesses as seen in Figs. 3 and 4. This Examiner's understanding is incorrect. "That is, at least the top of each of the connection portions (240, 250 in Fig. 3, 340, 350 in Fig. 4) is entirely and completely exposed on the top of the lid, and therefore Carter does not produce the advantages mentioned in the above Item (3).

c) The auxiliary terminals of Carter are not located in the recess. The members 362, 364, 366, 368 in Fig. 4 that the Examiner considers as corresponding to the auxiliary terminals are mounted on the tops of the corresponding connection members (240, 250 in Fig. 3, 340, 350 in Fig. 4) that are entirely and completely exposed on the top of the lid, so that they are also entirely and completely exposed on the top of the lid in the same manner as the connection portions.

d) According to the Examiner's understanding on Carter, the connection portions (240, 250 in Fig. 3, 340, 350 in Fig. 4) are partially placed in recesses on the slanted side of the battery, and can reasonably be considered part of the auxiliary terminals, as mentioned above. This Examiner's understanding is incorrect. In the amended claim 1 of the present application, the auxiliary terminal is located at the protruding end of the connection portion, and therefore is different in concept or idea from the connection portion itself.

With respect to the amended claim 4

The amended claim 4 reads: the end of the connection portion that protrudes to the inside of the recess on the top of the lid is embedded in resin filled and cured in the recess so that said at least one auxiliary terminal is exposed on the surface of said resin.

The Examiner cites the USP 4,634,642 (Lopez-Doriga) and rejects claim 4. However, Lopez-Doriga does not disclose the feature recited in the amended claim 4. The Examiner considers that no. 7 in Fig. 3 of Lopez-Doriga is embedded in resin filled and cured in the recess. This Examiner's understanding is incorrect. That is, no. 7 in Fig. 3 of Lopez-Doriga is embedded inside of the lid. Resin recited in claim 4 of the present application is a resin filled and cured in the recess formed on the top of the lid. In other words, a resin filled in the recess recited in claim 4 is different from the material of the lid and is newly supplied to the lid.

With respect to claim 11

The Examiner cites Lopez-Doriga and rejects claim 11. However, Lopez-Doriga does not disclose the feature recited in claim 11. The Examiner considers that Lopez-Doriga discloses wherein the top of the lid defines a dosed peripheral edge of the recess at the point where the connection member (no. 7 in Fig. 3 and 4) joins with the terminals. This Examiner's understanding is incorrect. That is, Lopez-Doriga does not disclose the feature of claim 11. The Examiner also considers that the purpose of the above feature is to contain the connection member under the lid while allowing a connection point to the battery terminals, therefore preventing shock or leakage. This Examiner's understanding is incorrect. That is, the purpose of the feature of claim 4 is not to prevent shock or leakage.

With respect to claim 12

The Examiner cites Carter and rejects claim 12 for the reason that Carter discloses wherein said recess on the top of the lid extends between the main positive and negative terminals, and wherein said at least one auxiliary terminal inside of the recess comprises a pair of auxiliary terminals that respectively connected to the main positive and negative terminals. This Examiner's understanding is incorrect. That is, Carter does not disclose a recess disposed between the main terminals and thus never disclose a single recess disposed between a pair of auxiliary terminals.

With respect to claim 29

Again, the Examiner understands that the members 362, 364, 366, 368 in Fig. 4 correspond to auxiliary terminals, and based on this understanding, considers that the holes into which these members are placed or screwed into are recesses. This Examiner's understanding is incorrect. That is, the members 362, 364, 366, 368 in Fig. 4 each have a part

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(specifically, a threaded portion) that is screwed into the corresponding hole, and therefore the residual portion of each member is completely exposed on the top of the lid. Accordingly, it is apparent that the arrangement "at least one auxiliary terminal in the recess on the top of the lid is disposed so as not to protrude outward from the top of lid" of claim 29 is not physically achievable even based on the disclosure of Lopez- Doriga.

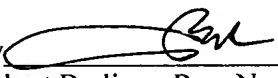
The rejection of claim 12 under 35 USC §103(a) as being unpatentble over Carter (US 5,877,609) in view of Mawston (US 5,866,274) Lopez-Doriga (US 4,634,642), and Hwa (US 6,121,750) is respectfully traversed for the foregoing arguments re: claim 1 and 12.

The rejection of claim 30 under 35 USC §103(a) as being unpatentble over Carter (US 5,877,609) in view of Mawston (US 5,866,274) Lopez-Doriga (US 4,634,642), and Joko (US 5,939,861) is respectfully traversed for the foregoing argument re: claim 1.

The Commissioner is hereby authorized to charge payment of any fees required associated with this communication or credit any overpayment to Deposit Account No. 50-3881. If an extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. 50-3881. A duplicate copy of this paper is enclosed.

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Respectfully submitted,

By 
Robert Berliner, Reg. No.: 20,121
BERLINER & ASSOCIATES.
555 West 5th Street; 31st Floor
Los Angeles, California 90013
(213) 533-4171
(213) 533-4174 (Fax)
Attorneys for Applicant